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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,148	11/24/2003	Brian J. Tillotson	7784-000966	7951

27572 7590 05/09/2007
HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER	
RAO, ANAND SHASHIKANT	

ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
05/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/722,148	TILLOTSON, BRIAN J.
	Examiner	Art Unit
	Andy S. Rao	2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-35 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-35 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 5/24/04.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al., (hereinafter referred to as "Endo") in view of Glück.

Endo discloses a method using a plurality of fixed video cameras mounted to a ground vehicle programmed to operate with pan/tilt cameras (Endo: figure 10), said method comprising the steps of: generating video data from said fixed video cameras (Endo: column 7, lines 10-16); generating commands at the output of said ANS for controlling the positions of pan/tilt cameras (Endo: column 7, lines 20-30); converting said commands into signals representing azimuths and elevations that said pan/tilt cameras would view (Endo: column 7, lines 45-50); mapping the azimuth and elevation signals to selected addresses containing the video data (Endo: column 8, lines 30-60); reformatting the video data from said selected addresses (Endo: column 13, lines 40-65), as in claim 1. However, even though Endo discloses using the fixed cameras on a

vehicle, it fails to disclose that the method is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including a method for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using an ANS programmed to operate with the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras into the Endo method in order have the vehicle of the Endo method maintain positional orientation as it generates its image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 1.

Regarding claim 2, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has combining video data from said selected addresses to stitch together images represented by said video data (Endo: column 14, lines 10-20); and inputting the stitched and reformatted data to the ANS as video streams (Glück: column 3, lines 30-45), as in the claim.

Regarding claims 3-4, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has displaying images from said video cameras (Glück: column 4, lines 30-35), as in the claims.

Regarding claim 5, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has transforming the image from each fixed camera to the image that would be seen by a pan/tilt camera pointing in the direction as determined by said commands generated by said ANS (Endo: column 13, lines 55-67), as in the claim.

Regarding claim 6, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has stitching together the video data generated from the video cameras, said stitched together data representing a composite image from said video cameras (Endo: column 11, lines 35-45); storing said stitched together data (Endo: column 11, lines 50-60); and providing selected portions of said composite image of the ANS by selectively addressing the stored video data (Endo: column 14, lines 1-20), as in the claim.

Regarding claims 7-10, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has mounting each of the video cameras on the vehicle such that each camera is mounted in fixed position to point radially outwardly from a common center axis (Endo: column ; and providing a sufficient number of said video cameras such that adjacent ones of the cameras have overlapping fields of view (Endo: column 13, lines 5-21), as in the claims.

Regarding claim 11, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has selecting portions of the image to be displayed to simulate the effect of a pan/tilt camera that pans in azimuth and elevation (Endo: column 15, lines 35-51), as in the claim.

Endo discloses a method using a plurality of fixed cameras mounted to a ground vehicle programmed to operate with pan/tilt cameras (Endo: figure 10), said method comprising the steps of: generating video data from said plurality of cameras (Endo: column 7, lines 10-16), the video data from each camera representing the image portion viewed by said camera (Endo: column 13, lines 10-15); inputting the video data to buffers (Endo: column 8, lines 1-15); converting signals at the outputs (Endo: column 7, lines 20-30), that would be used to control the positions of pan/tilt cameras, to signals representing azimuths and elevations that said pan/tilt cameras would view (Endo: column 7, lines 45-50); mapping the azimuth and elevation signals to selected addresses containing the video data (Endo: column 8, lines 30-60); generating video streams in response to said video data for input (Endo: column 15, lines 60-65), as in claim 12. However, even though Endo discloses using the fixed cameras on a vehicle, it fails to disclose that the method is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including a method for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using an ANS programmed to operate with the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and

navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras into the Endo method in order have the vehicle of the Endo method maintain positional orientation as it generates its image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 12.

Regarding claim 13, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, reformatting the video data from said selected addresses (Endo: column 13, lines 40-65), and generating video streams in response to said reformatted video data (Endo: column 15, lines 55-65), as in the claim.

Regarding claim 14, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, stitching together images as represented by the video data from the selected addresses of said buffers (Endo: column 11, lines 30-45); and inputting the stitched and reformatted data to the ANS as video streams (Endo: column 15, lines 55-65), as in the claim.

Regarding claim 15, method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has

wherein said panoramic image encompasses at least 360 degrees (Endo: column 13, lines 5-15), as in the claim.

Endo discloses a system using a plurality of fixed video cameras mounted to a ground vehicle programmed to operate with pan/tilt cameras (Endo: figures 3-5), said system comprising: a plurality of cameras for generating video data from said fixed video cameras (Endo: column 7, lines 10-16); a module generating commands at the output for controlling the positions of pan/tilt cameras (Endo: column 7, lines 20-30); a conversion component for converting said commands into signals representing azimuths and elevations that said pan/tilt cameras would view (Endo: column 7, lines 45-50); a translation component for mapping the azimuth and elevation signals to selected addresses containing the video data (Endo: column 8, lines 30-60); a reformatting component for reformatting the video data from said selected addresses (Endo: column 13, lines 40-65), as in claim 16. However, even though Endo discloses using the fixed cameras on a vehicle, it fails to disclose that the system is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including an ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using said ANS programmed to operate with the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück ANS for automatically navigating a

ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using said ANS programmed to operate with the cameras into the Endo system in order have the vehicle of the Endo system maintain positional orientation as it generates its image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 16.

Regarding claim 17, the Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has said reformatting component stitching together images as represented by said video data from the selected addresses (Endo: column 14, lines 10-20); and inputting the stitched and reformatted data to the ANS as video streams (Glück: column 3, lines 30-45), as in the claim.

Regarding claims 18-19, the Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has displays for displaying images from said video cameras (Glück: column 4, lines 30-35), as in the claims.

Regarding claim 20, Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has wherein said reformatting component transforms the image from each fixed camera to the image that would be seen by a pan/tilt camera pointing in the direction as determined by said commands generated by said ANS (Endo: column 13, lines 55-67), as in the claim.

Regarding claim 21, Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has

a stitching component for stitching together the video data generated from the video cameras, said stitched together data representing a composite image from said video cameras (Endo: column 11, lines 35-45); and a selection component for selecting portions of said composite image for display (Endo: column 14, lines 1-20), as in the claim.

Regarding claims 22-25, the Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has wherein each of the video cameras is mounted on the vehicle such that each camera is mounted in fixed position to point radially outwardly from a common center axis (Endo: column ; and providing a sufficient number of said video cameras such that adjacent ones of the cameras have overlapping fields of view (Endo: column 13, lines 5-21), as in the claims.

Endo discloses a system using a plurality of fixed video cameras mounted to a ground vehicle programmed to operate with pan/tilt cameras (Endo: figures 3-5), said system comprising: a plurality of cameras on said vehicle (Endo: column 7, lines 10-16), each video camera mounted in a fixed position to view a selected portion of a selected image (Endo: column 13, lines 10-15), said plurality of cameras collectively viewing a panoramic image about said vehicle (Endo: column 9, lines 10-25), pairs of said cameras having overlapping fields of view such that each portion of the said image is viewed by at least two cameras (Endo: column 13, lines 35-30), said video cameras generating video data (Endo: column 7, lines 20-25), the video data from each camera representing the image portion viewed by said camera (Endo: column Endo: figure 23); buffers for storing the video data generated by the video cameras (Endo: column 15, lines 55-65); a module generating commands at the output for controlling the positions of pan/tilt cameras (Endo: column 7, lines 20-30); a conversion component for

converting said commands into signals representing azimuths and elevations that said pan/tilt cameras would view (Endo: column 7, lines 45-50); a translation component for mapping the azimuth and elevation signals to selected addresses containing the video data (Endo: column 8, lines 30-60); a reformatting component for reformatting the video data from said selected addresses (Endo: column 13, lines 40-65), as in claim 26. However, even though Endo discloses using the fixed cameras on a vehicle, it fails to disclose that the system is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including an ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using said ANS programmed to operate with the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using said ANS programmed to operate with the cameras into the Endo system in order have the vehicle of the Endo system maintain positional orientation as it generates its image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 26.

Regarding claim 27, the Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has a stitching component for stitching together the images as represented by the video data from the selected addresses of said buffers (Endo: column 11, lines 35-45), said stitched and reformatted data being input to the ANS as video streams (Endo: column 14, lines 1-20), as in the claim.

Regarding claim 28, the Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has wherein the panoramic images encompasses at least 360 degrees (Endo: column 13, lines 5-15), as the claim.

Endo discloses a vehicle capable (Endo: column 7, lines 10-28) comprising: a plurality of cameras mounted to said vehicle for generating a panoramic scene (Endo: column 7, lines 20-25); an module for generating azimuth and elevation commands (Endo: column 7, lines 40-50); a translator for translating azimuth and elevation commands from said ANS to select sub-sets of the panoramic scene such that the cameras function as a virtual pan/tilt camera system (Endo: column 8, lines 35-45); and a vehicle propulsion system for moving and guiding the vehicle (Endo: column 10, lines 60-65), as in claim 29. However, even though Endo discloses using the fixed cameras on a vehicle, it fails to disclose that the system is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including an ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using said ANS programmed to operate with

the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using said ANS programmed to operate with the cameras into the Endo system in order have the vehicle of the Endo system maintain positional orientation as it generates its image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo system, now incorporating Glück's ANS for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 29.

Endo discloses a method (Endo: figures 10-12) comprising: generating video data from fixed cameras video cameras mounted to said vehicle (Endo: column 7, lines 20-25) representing a panoramic image (Endo: column 13, lines 10-15); selecting video data representing a portion of said panoramic image (Endo: column 14, lines 45-55), as in claim 30. However, even though Endo discloses using the fixed cameras on a vehicle, it fails to disclose that the method is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including a method for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using an ANS programmed to operate with the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and

navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras into the Endo method in order have the vehicle of the Endo method maintain positional orientation as it generates its image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 30.

Regarding claim 31, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has providing terrain data representing a map of the terrain in which said vehicle is operating (Endo: column 7, lines 50-55), and wherein said navigating step further comprises navigating said vehicle at least partially in response to said terrain data and said selected data (Glück: column 1, lines 45-50).

Regarding claim 32, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has displaying images from said video cameras (Glück: column 4, lines 35-40), as in the claim.

Regarding claim 33, the Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has stitching together the video data generated from the video cameras, said stitched

together data representing a composite image from said video cameras (Endo: column 11, lines 35-45), displaying selected portions of said composite image (Glück: column 4, lines 35-40), as in the claim.

Endo discloses a method using a plurality of fixed video cameras mounted to a ground vehicle programmed to operate with pan/tilt cameras (Endo: figure 10), said method comprising the steps of: generating a panoramic image (Endo: column 13, lines 10-15) using fixed video cameras (Endo: column 7, lines 10-16); reformatting the panoramic image (Endo: column 13, lines 40-65); inputting the reformatted panoramic image of a module processing the transformed image as in the claim (Endo: column 15, lines 55-65), as in claim 35. However, even though Endo discloses using the fixed cameras on a vehicle, it fails to disclose that the method is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including a method for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using an ANS programmed to operate with the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras into the Endo method in order have the vehicle of the Endo method maintain positional orientation as it generates its

image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 34.

Endo discloses a method using a plurality of fixed video cameras mounted to a ground vehicle programmed to operate with pan/tilt cameras (Endo: figure 10), said method comprising the steps of: generating a panoramic image (Endo: column 13, lines 10-15) using fixed video cameras (Endo: column 7, lines 10-16); reformatting the panoramic image (Endo: column 13, lines 40-65); inputting the reformatted panoramic image of a module processing the transformed image as in the claim (Endo: column 15, lines 55-65), said reformatting step further comprising the steps of: converting pixel indices for the focal planes of the fixed cameras to physical location on the cameras' focal planes (Endo: column 13, liens 40-60), converting the image from intensity as a function of x and y locations on the fixed cameras' focal planes, to intensity as a function of Az-El coordinates relative to the fixed cameras' optical axes (Endo: column 7, lines 45-50), rotating the Az-El coordinates to Az-El coordinates relative to the commanded optical axes of the virtual pan/tilt cameras, thereby producing a resultant Az-El image (Endo: column 15-25), converting the resultant Az-El image to intensity as a function of x and y locations on the virtual pan/tilt cameras focal planes (Endo: column 13, liens 55-67; column 14, lines 1-20), converting the x-y locations to pixel values, and interpolating the pixel values (Endo: column 14, lines 45-55), as in claim 35. However, even though Endo discloses using the fixed cameras on a vehicle, it fails to disclose that the method is directed towards automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS

programmed to operate with the cameras, as in the claim. Glück discloses observation and reconnaissance system for armored vehicles (Glück: figure 1) including a method for automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle (Glück: column 3, lines 10-17) and using an ANS programmed to operate with the cameras (Glück: column 4, lines 5-40) in order to maintain positional orientation of a combat environment vehicle for target tracking and navigational purposes (Glück: column 1, lines 40-50). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art to incorporate the Glück teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle and using an ANS programmed to operate with the cameras into the Endo method in order have the vehicle of the Endo method maintain positional orientation as it generates its image database (Endo: column 1, lines 20-35) in a combat environment (Glück: column 1, lines 45-50). The Endo method, now incorporating Glück's teaching of automatically navigating a ground vehicle using a plurality of fixed video cameras mounted to the vehicle, has all of features of claim 35.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tuck discloses a display system having wide field of view. Poelstra discloses a method and device for producing panoramic images. Ritchey discloses a panoramic image based virtual reality/telepresence AV system and method. Dykes discloses a 360 degree non-programmed visual system. Gilvydis discloses an observation system for military vehicles. Moezzi discloses immersive video including hypermosaicing. Neta discloses video imaging

system with interactive windowing capability. McCall discloses a method and apparatus for a simultaneous capture of a spherical image.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andy S. Rao
Primary Examiner
Art Unit 2621

asr
May 8, 2007